

**ABSTRACT OF THE DISCLOSURE**

The TCP receiver's advertised window (i.e., the receive buffer of a TCP connection) limits the maximum window and consequently the throughput that can be achieved by the sender. Thus, the idea behind TCP rate control is to match the offered network load to the available resources by modifying at an intermediate network device, the receiver's advertised window in TCP acknowledgments returning to the sources. In this disclosure, we propose a new TCP rate control scheme for a shared buffer where the buffer is logically organized into multiple queues. In the scheme, dynamic buffer thresholds are used to ensure efficient and fair usage of buffer memory among the queues. Conventional schemes allocate buffer space to each queue through the use of static buffer thresholds. This can result in unnecessary packet drops which leads to poor network performance since congested or heavily loaded queues cannot gain access to buffers not utilized by lightly loaded queues.